

Special Article

Financial Woes Threaten Infrastructure Investment in APEC Region

The global financial crisis of 1997-98 has had serious impacts on the economies and food systems of the Asia-Pacific Economic Cooperation (APEC) region. Consumer incomes have fallen, food costs have risen, and food consumption has declined in the five most affected economies—Indonesia, Malaysia, the Philippines, South Korea, and Thailand. A particularly troubling impact has been the scaling back of public and private infrastructure investment in these economies, where underinvestment in infrastructure is already a problem. The level of infrastructure development is a significant factor affecting the outlook for U.S. agricultural trade in these five economies, which account for more than 10 percent of U.S. agricultural exports. More than 60 percent of U.S. agricultural exports goes to the entire APEC region.

Economic infrastructure includes:

- public utilities—power, telecommunications, piped water supply, sanitation and sewage, solid waste collection and disposal, piped gas, refrigerated warehouses;
- public works—roads and major dam and canal works for irrigation and drainage;
- other transport sectors—urban and interurban railways, urban transport, ports and waterways, and airports;
- public, private, and international financial systems; and
- a legal system and property rights to protect private sector investment in infrastructure.

Infrastructure development spurs a market's economic growth and thus its demand for food, and it reduces marketing costs for both domestic and foreign food products, lowering consumer prices and raising consumption. The level of infrastructure development can enhance the competitiveness of imported food products in large urban areas where international links via air and ocean shipping may be cheaper than links between rural and urban areas within the same economy. Underinvestment in infrastructure can leave rural areas isolated, limiting the economic potential of the economy as a whole. Sizable investments are needed to maintain and expand infrastructure across APEC to sustain economic growth and facilitate trade, both within and among these economies.

Underdeveloped Infrastructure Hinders Economic Growth

Despite Asia's stellar economic performance up to 1997, the region's infrastructure is among the most underdeveloped in the world, particularly in nonurban areas. With a large rural population and the world's most rapidly growing urban populations, Asia faces huge challenges in developing infrastructure fast enough. The World Bank estimates that development in East and



Port of Tacoma

Southeast Asia will have to generate \$1.3 to \$1.5 trillion in infrastructure between 1995 and 2004 to sustain the food system development and economic growth it was accustomed to prior to the financial crisis.

Combined public and private sector investment in physical infrastructure before the financial crisis in developing East and Southeast Asia (excluding Japan) probably exceeded 5 percent of gross domestic product (GDP), or about \$80 billion a year. But private sector investment in East and Southeast Asia declined by more than half after the boom year of 1996 as investors perceived increased risk and uncertainty in many of the region's economies. Public finance also declined. Economic contractions and slowdowns reduced tax and tariff revenue and diverted public funds to underwrite failing banking systems and to provide safety net programs for the growing numbers of poor.

International financial institutions like the World Bank are also sources, although relatively modest, for infrastructure investment. World Bank allocations for infrastructure in 1998 in the Asia-Pacific region totaled \$2.02 billion, down from \$2.54 billion in 1997. Asia Development Bank allocations for transportation and communication projects were relatively stable during 1995-98.

Some economies have used spending on infrastructure projects as a way to jump-start economic expansion—China and Japan are examples. The recently completed airport in Hong Kong (China), and the ongoing Three Gorges dam project on China's

Yangtze River, which at \$50 to \$70 billion is perhaps the most costly infrastructure project in history, demonstrate Asia's capacity for ambitious projects. However, infrastructure programs are often the first to be cut when fortunes fall in developing countries, as recently seen in Indonesia and South Korea and to a lesser extent Malaysia.

As a result of the financial crisis, Indonesia's government currently has no plans to enhance agricultural infrastructure. Plans to build better harbor and cold storage facilities are being put on hold, and it will be some time before an efficient Indonesian cold chain materializes (a marketing system that protects quality and safety of perishable products from production to consumption). With the high price of spare parts and other materials impinging on the government's ability to maintain and repair roads and bridges, the cost of transporting food products to and from the countryside is escalating.

In Malaysia, investment in infrastructure development has been heavy over the past decade, including major improvements in interstate highways, public transit, and port facilities; a new international airport; and improved electrical power generation. Financial crisis has led to cancellation of one planned highway project and cessation of work on the Bakun Hydroelectric Dam in Sarawak, but most other infrastructure projects are proceeding. In Korea, where government outlays for rural infrastructure have been relatively low, the financial crisis has imposed greater budget constraints on rural infrastructure investment.

Even before the financial crisis, deficiencies were apparent in the infrastructure of a number of developing economies in APEC. While Asia's sea and air links are well developed (Asia has the world's three busiest container ports: Hong Kong; Singapore; and Kaohsiung, Taiwan), road and rail service are far less developed in China, Southeast Asia, and Latin America than in more developed parts of the world. The fragmented nature of Southeast Asia's geography presents a unique challenge for road and rail development, particularly in Indonesia and the Philippines, which are both large archipelagos.

Road density (generally measured as road length per square kilometer) is generally higher for developed, densely populated economies such as Japan, Hong Kong (China), and the city-state of Singapore. Road service (generally measured as kilometers per 1,000 people) is also greater in developed economies. Many of the developing economies in the APEC region have both low road density and low road service. As a result, rural areas are more isolated than in other regions.

For example, nothing comparable to the U.S. Interstate Highway System or Latin America's Pan American Highway exists in Asia to link rural areas to urban areas and to better integrate the diverse economies. Visionaries have suggested grand schemes, from building superhighways linking countries in Southeast Asia to building a Europe-Asia landbridge; however, such projects remain distant dreams.

What Are APEC & PECC?

The Asia-Pacific Economic Cooperation (APEC) forum began in 1989 as an informal grouping of 12 market-oriented Asia-Pacific economies with the goals of better managing the growing interdependence in the Pacific region and sustaining economic growth. APEC, now 21 members strong, facilitates ministerial-level discussions and cooperation on a range of economic issues, including trade promotion and liberalization, investment and technology transfer, human resource development, energy, telecommunications, and transportation.

Members and dates of joining:

1989 Australia, Brunei, Canada, Indonesia, Japan, Malaysia, New Zealand, Philippines, Singapore, South Korea, Thailand, United States

1991 China, Hong Kong, Taiwan

1993 Mexico, Papua New Guinea

1994 Chile

1998 Peru, Vietnam, Russia

The private-sector counterpart of APEC is the Pacific Economic Cooperation Council (PECC). It was founded in 1980 and brings together senior government, academic, and business representatives to share perspectives and expertise in search of broad-based answers to economic problems in the Asia-Pacific region. PECC's membership is the same as APEC's plus Colombia. PECC is the only nongovernmental organization with APEC observer status.

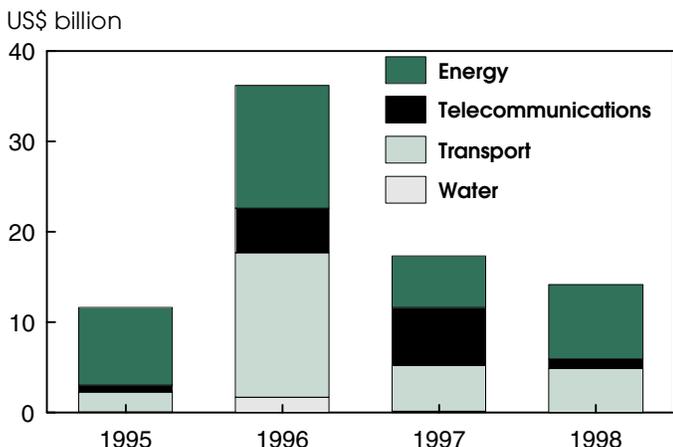
Urban Population Growth Strains Infrastructure

Projected growth in APEC's urban population will severely strain the region's infrastructure and its capacity to provide basic services, including food supply. The urban population is projected to grow from its current size of about 1.1 billion to 2 billion in 2025, with most of the increase occurring in China and developing Southeast Asia.

One way to alleviate population pressure would be to invest in infrastructure that integrates rural areas with the rest of the economy and allows rural people to remain in rural areas by participating competitively in the economy as producers and consumers. Since 1960, the Japanese government has spent about 20 percent of its annual public works budget on agriculture, forestry, and fisheries. Nearly all rural public roads are now paved, water supply and sewage service have been greatly expanded, and most rural communities are electrified. Providing this basic infrastructure has attracted other industries to rural areas and given the rural population greater access to urban opportunities. Eighty percent of the rural population can reach a large city within an hour by car and more than 80 percent of farm household income

Special Article

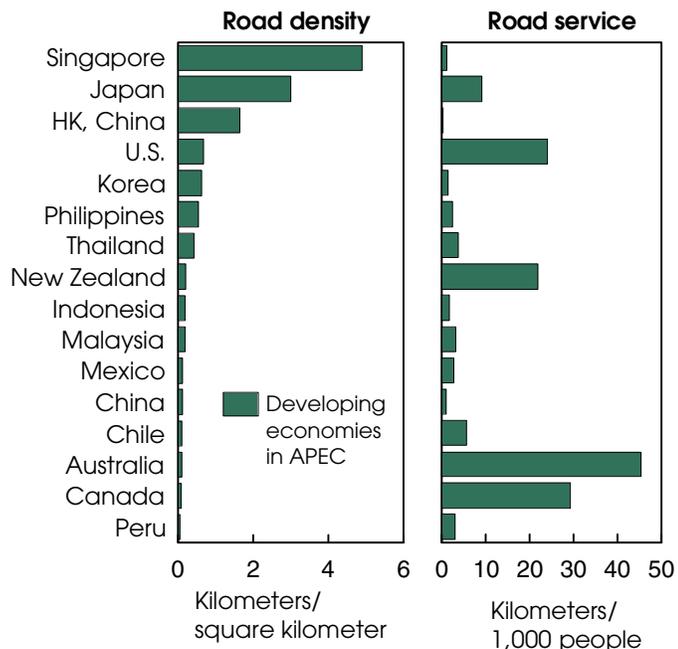
Private-Sector Investment in East and Southeast Asia Infrastructure Is Down



Includes the developing economies of East and Southeast Asia: China; Hong Kong, China; Indonesia; Korea; Malaysia; Philippines; Singapore; Taiwan; Thailand; Myanmar; Cambodia; Laos; and Vietnam. Excludes Japan.
 Source: Australian Department of Foreign Affairs and Trade in cooperation with Tasman Asia Pacific, *Asia's Infrastructure in the Crisis, Harnessing Private Enterprise*, October 1998.

Economic Research Service, USDA

Road Networks Are Generally More Extensive in Developed Economies



Most data are for 1993; population numbers are for 1996.
 Sources: Pacific Food Outlook, 1999-2000, Pacific Economic Cooperation Council; "A Database of World Infrastructure Stocks, 1950-95," World Bank, 1998.

Economic Research Service, USDA

comes from nonfarm sources. Rural location of industry has been far more instrumental than price support programs for farmers in sustaining rural communities in Japan.

The Promise of Private-Public Partnerships

Public resources have long been counted on to develop the basic infrastructure necessary for an economy's markets to function. But with deregulation and the declining role of public investment, private capital, though still modest, is becoming relatively more important. The role of the private sector has been enhanced by public-private arrangements (such as leases and concessions) that recognize the special nature of infrastructure and the need for economic incentives to attract private sector interest. Technological change, particularly in telecommunications, has also helped increase private sector participation in infrastructure development.

The private sector, with strong public sector backing, is critical to introduction of competition and commercial principles to infrastructure development. Private-sector commitment also requires a well-defined property rights system. Chile and Malaysia have made great strides in privatizing infrastructure services. Chile's Concession Program, established in 1995, has earmarked a number of road, airport, port, irrigation, and rail-road projects to be built, maintained, and operated by private companies under contract to the government. Malaysia's program of infrastructure privatization goes back to 1983. In 1996-2000, the private sector is expected to invest three and a half times what the public sector spends on roads, ports, water supply, power, and telecommunications.

A key advantage of private sector involvement in the food system is lower costs and increased efficiency. Adopting commercial principles has been shown to enhance a system's ability to move food products, particularly perishable products, quickly and cheaply from the point of production to the point of consumption, sometimes across great distances. Privatization of the Manila ports, for example, not only increased throughput, labor productivity, and revenue to the government, but also reduced turnaround time by one-fifth to one-third. Workers in New Zealand's Auckland Port, privatized in 1998, now handle six times the volume of freight that was handled before privatization, while the number of workers has declined by one-third and turnaround time has been cut in half.

Private investment in APEC's infrastructure development, despite its increased role, has been modest, even accounting for the effects of the financial crisis. If the World Bank's \$1.5-trillion prescription for infrastructure investment in developing East and Southeast Asia over 10 years is to be realized, the private component will have to increase several-fold. This will require accelerated development of bond markets in the region to attract private capital, especially for financing large infrastructure and capital-intensive industrial projects that require long-term fixed-rate debt capital.

Improving Food System Efficiency

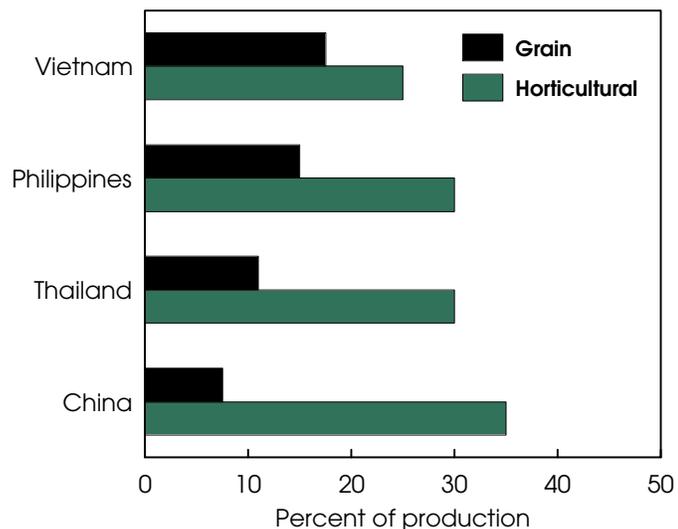
Infrastructure development reduces transaction costs, which benefits both producers and consumers. Removal or reduction of these costs could have as positive an effect on food and agricultural trade as removal or reduction of a tariff or similar trade barrier.

A sizable transaction cost in the APEC region's food system is postharvest loss, especially for horticultural products (25 to 35 percent loss) vs. grain (at 10 to 20 percent). Many of these losses are attributable to inadequate infrastructure: insufficient electricity for drying grain or refrigerating fresh fruits and vegetables, lack of warehousing capacity, or inadequate transportation.

Some national transportation systems are so inadequate and costly that it is cheaper to import basic commodities from other parts of the region or world than from geographically closer production areas within the economy. In the Philippines, the cost of moving corn from some growing areas of Mindanao to the poultry growers near Manila is estimated to be higher than importing corn from Bangkok, Thailand.

In China, corn production is concentrated in the north and northeast, while livestock production is in the southeast. The rail transport system, while extensive, is prone to congestion and delay due to heavy traffic, inefficient practices, and outdated equipment. It is often cheaper for livestock producers in southern China to import corn from the U.S. or other foreign sources than from north and northeastern China.

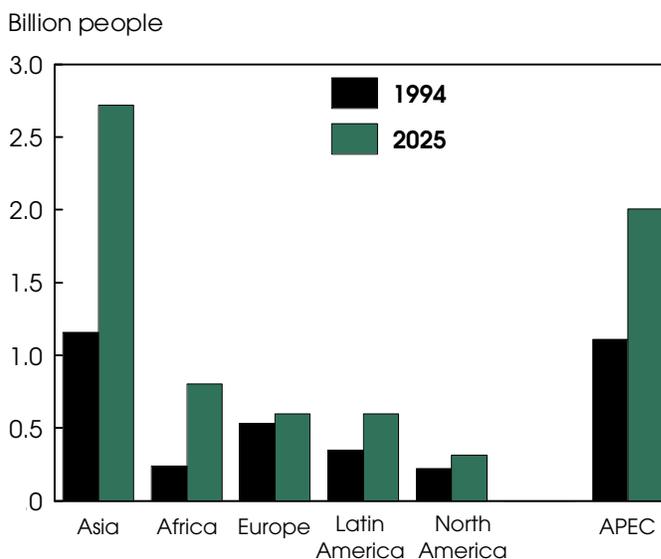
Post-harvest Losses Are High for Horticultural Products in Several Asian Countries



Source: The 5th JIRCAS International Symposium, "Postharvest Technology in Asia--A Step Forward to Stable Supply of Food Products," Tsukuba, Ibaraki, Japan, Sept. 9-10, 1998.

Economic Research Service, USDA

APEC's Urban Population Is Projected To Exceed 2 Billion by 2025



APEC includes Australia, Brunei, Canada, Indonesia, Japan, Malaysia, New Zealand, Philippines, Singapore, South Korea, Thailand, U.S., China, Hong Kong, Taiwan, Chile, Mexico, Papua New Guinea, Peru, Vietnam, and Russia.

Source: United Nations.

Economic Research Service, USDA

Efforts to reduce such costs and inefficiencies are being undertaken throughout the region. Australia's Networking the Nation program aims to enhance infrastructure and other support to communities in rural and remote areas. Sixty percent of Malaysia's new roads will be built under a rural roads program that aims to improve the accessibility of rural areas to the broader economy.

Infrastructure investment is becoming a multinational issue. National boundaries are becoming less relevant in a region that is moving toward free trade under APEC's Bogor Declaration (which proposes free trade in the region's developed economies by 2010 and in all economies by 2020).

The formation of trading blocs like NAFTA (North American Free Trade Agreement) and ASEAN (Association of Southeast Asian Nations) as well as "growth triangles" in East and Southeast Asia reflect the multinational benefits of infrastructure investments. These geographically contiguous areas have coalesced to exploit economic complementarities and to overcome physical and artificial constraints to rational allocation and use of resources within a region. Changing trade flows under NAFTA, for example, have created transportation bottlenecks along the U.S.-Mexico border, disrupting rail and trucking service. Resolving border-crossing bottlenecks is critical to an efficient food system and will require improved transportation facilities, better administration, and more coordinated infrastructure planning that subordinates national interests to regional interests.

Special Article

“Growth triangles” in East and Southeast Asia are less formal than trading blocs and their scope is usually limited to parts of rather than whole economies. Two examples are Southern China: made up of Guangdong and Fujian Provinces, Shenzhen, Hong Kong, and Taiwan; and Johor (Malaysia)-Singapore-Riau (Indonesia). Infrastructure is critical to their development, giving rural residents and farm households within the triangle alternatives that keep them from the gravitational pull of urban areas.

The recent scaling back of infrastructure investment in the financially distressed APEC economies is expected to be transitory. Equity markets across Asia are up, and U.S. mutual funds targeting Asia have outperformed the Dow Jones stock index since January 1999. With economic expansion accelerating in 1999 and 2000 and with interest rates and inflation under better control, public and private infrastructure funds should become increasingly available to the crisis economies.

But lack of public and private funds in the short term will affect maintenance of existing infrastructure in the economically distressed parts of the APEC region, and cause delay in new projects. Given the frequently large size of and long lead times needed for many infrastructure projects, any cutback or delay can have disproportionate consequences. These include:

- reduced potential for economic diversification in rural areas;
- increased transportation costs, raising food prices to consumers and lowering returns to producers; and
- increased postharvest losses because of interrupted power, telecommunications, refrigeration, and water supply.

In some instances, lowering transaction costs through improvements/expansion of infrastructure could enhance the positive effects of reducing traditional barriers to food and agricultural trade like tariffs and quotas. Lowering tariffs on horticultural product imports, for example, may have little impact on trade if infrastructure to facilitate trade—such as modern container ports, reliable power to support refrigeration storage capacity, and ready access to highway systems—is inadequate.

APEC was directed by its Ministers in 1997 to work with the private sector in developing infrastructure initiatives for promoting integration and diversification of rural economies in their efforts. In 1999, APEC and its private-sector counterpart PECC (Pacific Economic Cooperation Council), launched RISE—Regional Integration for Sustainable Economies—a public/private initiative designed to improve the economic viability of rural regions of APEC member economies through infrastructure investment.

Tapping private capital will be important in increasing the level of annual investment in infrastructure commensurate with economic growth in Asia. Supranational planning will be needed to harmonize infrastructure development as national boundaries become less relevant to the trade reality in APEC. **AO**

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A key source of information for this article is the Pacific Food Outlook 1999-2000, published by the Pacific Economic Cooperation Council, August 1999. For an electronic copy, visit <http://www.pecc.org/>

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